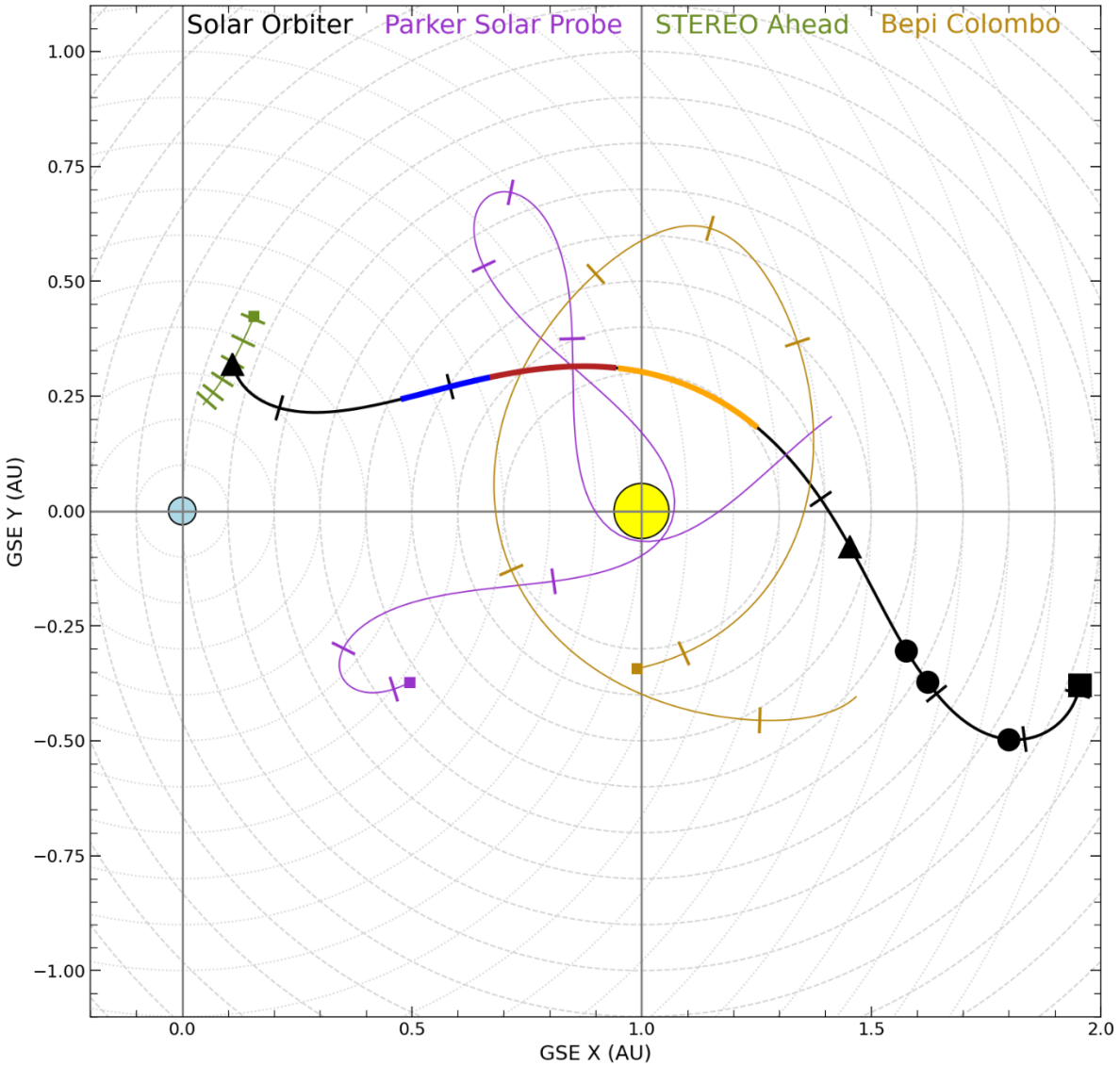
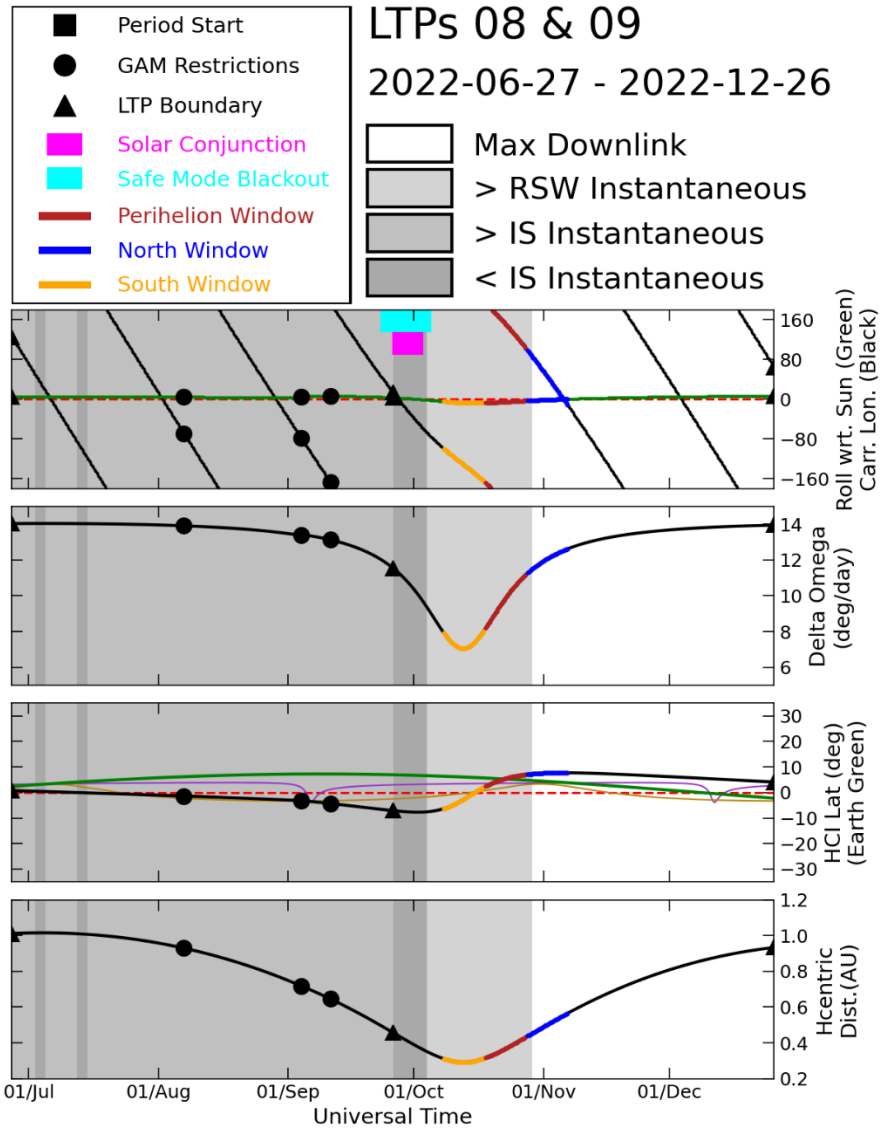
RPW cruise phase operations (LTP08&9)

September 12, 2022

RPW consortium meeting in Belfast

LTP08&09: July to Dec 2022



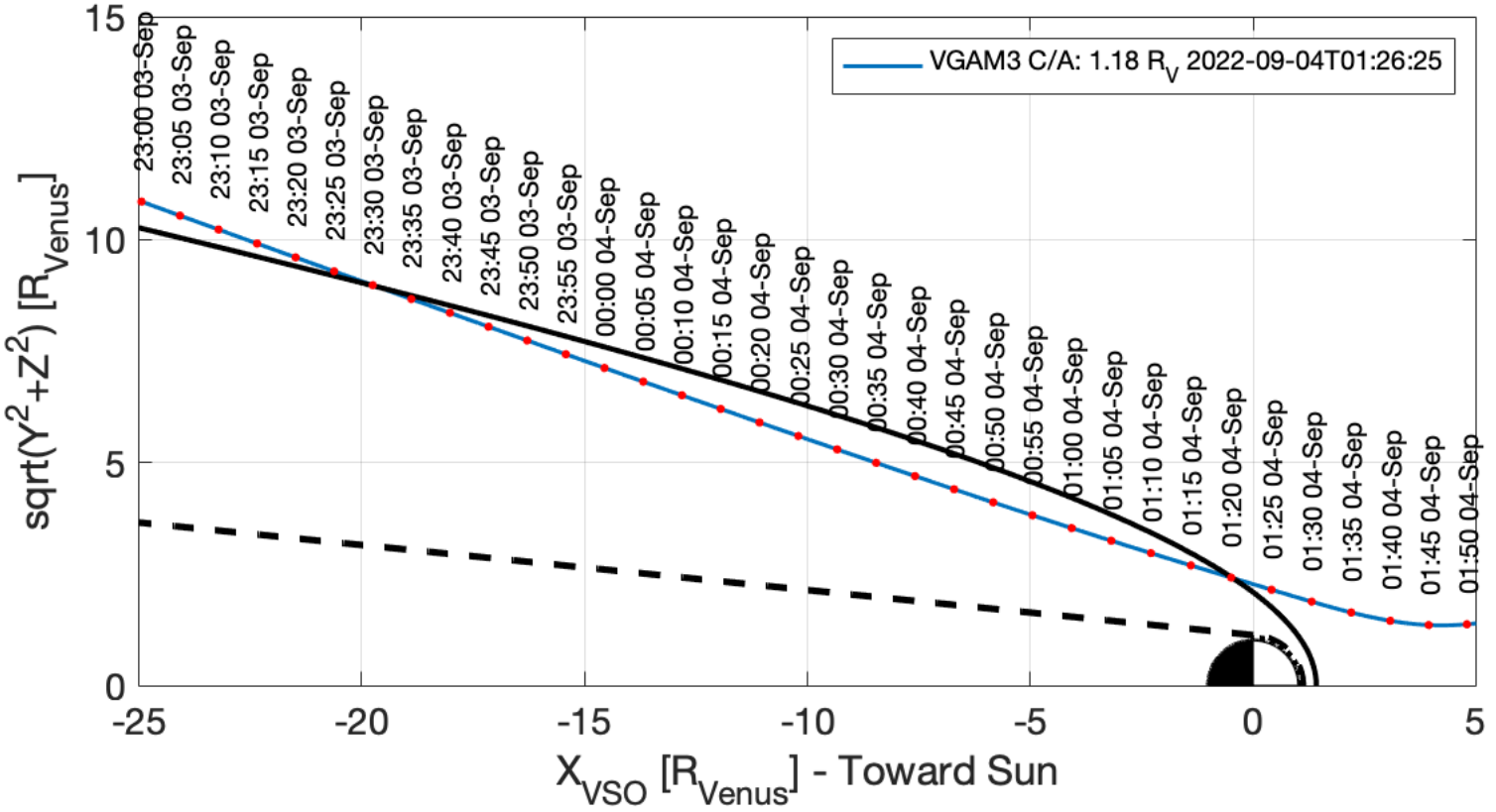


- This time, we see Langmuir waves in the tail and also in the foreshock of Venus (in addition to the usual lower frequency waves).

LTP08&09: July to Dec 2022

- RPW settings since May 2022 until September 2022
  - Very low TM rate used (comparable to the original Solar Orbiter plan): 10 minutes of BURST per day, snapshots every 5/10 minutes.
- Flyby of Venus on September 4:
  - Attempt to time the SBM1 mode on the outbound shock crossing – see next slide.
- PSP alignment (after September 5):
  - 100% BURST mode for 2 days
- Starting from mid-September: more TM available and increasing with time
  - At the same time, we approach the perihelion
  - RPW going back to the high rate operations with multiple hours of burst mode per day and high rate TDS data.
  - TDS switching to perihelion mode (524 kHz sampling) around 0.5 AU.

3rd Venus flyby operations



- SolO approaching Venus from the tail side, exiting through the shock into foreshock/SW.
  - Standard RPW Venus config (Burst mode with frequent TDS snapshots) used until ~7 minutes before the outbound crossing.
  - Forced SBM1 mode centered on the shock crossing
  - NORMAL mode with numerous snapshots after the shock (foreshock)
- Thanks to Niklas for the model calculations.